

MEURA NEWS

TRADITIONALLY PIONEERS SINCE 1845

N°16
NOV. 2011

Dear Readers,

For more than 20 years now our first customers for the **MEURA 2001** filter have benefited from all the advantages that our fine milling technology brings to brewers.

The productivity, the savings in extract, the high density and brightness of the wort that this technology provides have been winning over more and more new customers ever since.

In this regard the year 2011 is a great brew for **MEURA**! We invite you to find out – among other subjects addressed in this MeuraNews N°16 – what makes a **MEURA** brewhouse so efficient compared with the traditional brewhouses.

It will be a pleasure for us to meet with you at our stand at **BRAU BEVIALE 2011** to explain our latest developments to you in detail. And as usual, of course, you'll be greeted with a tasty selection of our best Belgian beers.

I wish you all a pleasant reading and look forward to seeing you in Nuremberg.

And of course,
Sincerely yours.

Brau Bevale 2011
HALL 7, STANDS 432-434-531
COME AND VISIT US!



Christian De Brackeleire
Chief Executive Officer



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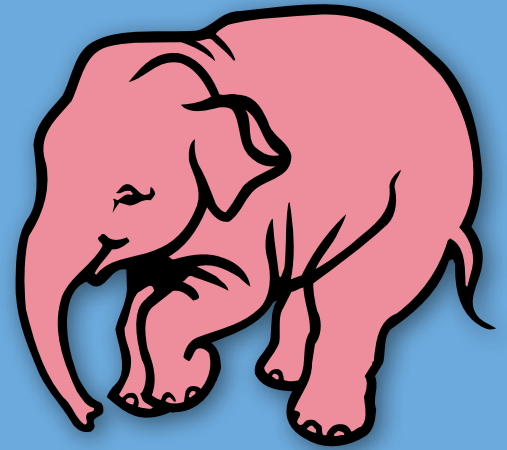
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A Meura 2001 Junior Hybrid filter installed in Belgium



Belgium, the country of the beer, has more than 100 breweries on its territory – of all sizes.

The Huyghe brewery, located in Melle near Ghent, is one of the oldest breweries in the North of Belgium.

The first brewing activities in the Huyghe brewery date back to 1654!

The Huyghe brewery is renowned worldwide for its Delirium Tremens beer, which was awarded the gold medal at the World Beer Championship in Chicago in 1998, and for its Guillotine, a high fermentation beer that won the gold medal at the prestigious Brewing Industry International Awards in 2011.

In 2010, faced with continuously increasing demand, the brewery decided to modernise and to double its capacity to reach 300,000 hl!

The wide variety of beers, combined with an improvement of the brewhouse yield and wort quality, logically lead the brewery to the fine milling technology and subsequently to the Meura 2001 technologies.

The main equipment supplied by Meura consists of:

- **A Meura 2001 Hybrid Junior filter for 3.2 tons of malt equivalent**
- **A Classicmill CLM1 Junior with a capacity of 1.8 tons of malt per hour**
- **A grist hopper**
- **A Mechamasher of 15 tons malt grist per hour**

To cope with the unique variation in raw materials, the Meura 2001 Junior filter has been supplied with an intercalary plate that enables it to modulate the filter capacity to the desired level.

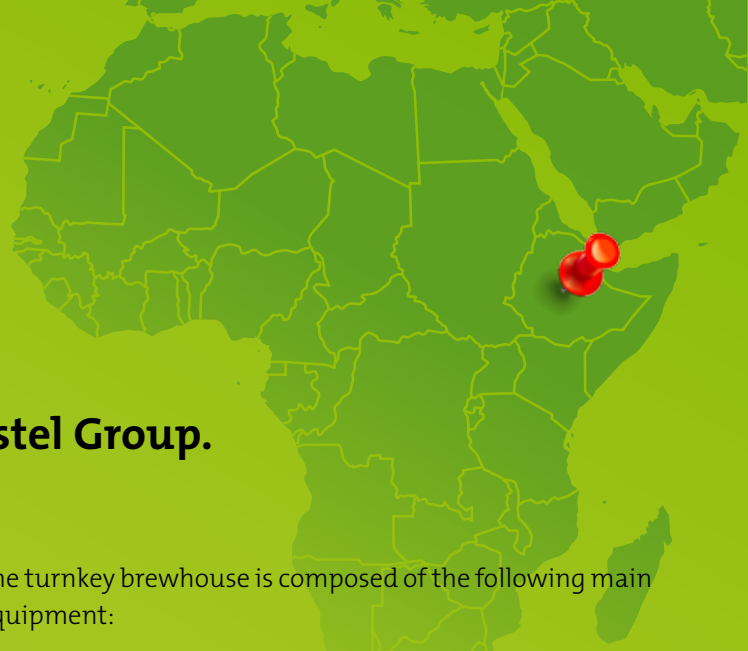
It is the first time a Meura 2001 Hybrid Junior filter has been sold and installed in Belgium.

This filter was specially developed for smaller-sized breweries like the craft brewers in the USA, Belgium and elsewhere in the world.

With this article we wish to thank the Huyghe brewery for its trust in our technologies and its cooperation throughout the implementation of the project!



HAWASSA BREWERY



A new success for Meura with the Castel Group.

Ethiopia, located in the Horn of Africa, is the second largest African country in terms of population (85 million inhabitants), the ninth largest African country in area, and has an annual beer production of about 4 million hectolitres.

The Castel Group, which already owns the Brasserie Saint Georges located in Addis-Ababa, the capital of Ethiopia as well as the Kombolcha brewery (located in the North of the country) is the largest brewer in the country.

In 2010, to meet the continuously growing demand, Castel decided to build a greenfield brewery in Hawassa, a prosperous small town created in 1959 on the banks of Hawassa Lake.

Already very familiar with and convinced by the Meura technologies previously installed in the Saint Georges brewery, Castel naturally turned to Meura again for the complete installation of the new brewhouse with a capacity of 250 hl per brew!

The contract was signed in May 2010 and the first shipment left Belgium on the 30th of September from Péruwelz harbour (see photos) to Hawassa, Ethiopia.

The turnkey brewhouse is composed of the following main equipment:

- **A Classicmill CLM1 PCV (Pneumatic Conveyor Version) with a capacity of 4.8 tons of malt per hour**
- **A Mechamasher of 25 tons malt grist per hour**
- **A Meura 2001 Hybrid filter for 6.5 tons of malt equivalent, equipped with the ILOBox technology**
- **A wort kettle with internal bundle**
- **A Clarisaver**

On 18 May 2011, exactly one year after signing the contract, the first brew was produced.

We would like to thank the team of the Hawassa brewery as well as the Castel Group for its trust in our technologies and for their cooperation during the entire project!

We also wish them superb success!



Hawassa Brewhouse
(Ethiopia)



Hawassa Brewhouse
(Ethiopia)



Hawassa Brewhouse
(Ethiopia)



Perm Brewery, Russia (InBev)

Meura's brewhouse advanced technology

Over the last five years, increasing numbers of brewers have placed their trust in Meura for the supply of turnkey brewhouses. Meura is proud to say that it is considered one of the most reliable state-of-the-art brewhouse suppliers by most brewers. This positive trend for the company is a result of the continuous development of improved technologies as required by the industry: Meura provides the highest productivity, the lowest extraction losses, the best wort quality, etc.

The use of fine grist in conjunction with the **Meura 2001** filter is at the core of Meura's brewhouse technology. When the Meura 2001 was introduced to the brewing industry in 1989 it was seen by most brewers as a revolutionary development. At the time (already more than 20 years ago!), Meura guaranteed an extract yield of 100% of the laboratory yield at 12 brews/day. Even the best lauter tuns at the time were far behind those performances. In the 1990s Meura started to be very active in brownfield projects, mainly replacing lauter tuns or conventional mash filters with Meura 2001 filters in existing brewhouses.

With the start of the consolidations in the brewing industry in the second half of the 1990s, more pressure was placed on brewhouse productivity (≥ 14 brews/day), and high gravity brewing ($>16^\circ\text{P}$ cold wort for lager beers) was intensively introduced. In order to cope with these new demands Meura started to focus on the **process before the Meura 2001 filter** to further increase overall performance..

Milling

The thin bed filtration technology of the Meura 2001 needs fine grist to achieve its optimal performance. Meura was the first company in the world to use the hammermill industrially for the milling of barley malt. Two types of hammermill existed, one with a vertical shaft and one with a horizontal shaft. Its strong experience enabled Meura to select the most efficient technology, which was the hammermill with a horizontal shaft. Today, Meura offers two dry fine milling technologies: the **Classicmill** and the **Carbomill**.

Although Meura has always installed and commissioned hammermills, the manufacturing of this equipment was initially sub-contracted. Since 2006 Meura has been designing and manufacturing its own hammermills to ensure that its customers benefit from all the improvements resulting from its more than 20 years of experience in using hammermills to grind malt. For very specific applications the **Hydromill**, an underwater milling disc mill, has been developed and patented by Meura.

Mashing-in

Traditionally, the mashing-in of dry grist was performed by a hydrator directly connected to the top of the mash conversion vessel. This method is no longer adapted to the modern brewing practice because:

- High oxidation of the mash occurs when it falls inside the mash conversion vessel;
- Lump formation is almost unavoidable for the thick mashes that are necessary for high gravity brewing;
- A high agitator speed is required afterwards to break up the lumps, which generates shear forces that finally reduce the mash filterability.

To prevent these serious problems and to meet the new requirements of the industry, MEURA developed a mechanical pre-masher, the **Mechamasher**. The first Mechamasher was put into operation in the year 2001. Since then more than 60 Mechamashers have been installed worldwide.

Mash conversion

The conventional mash conversion vessels are equipped with double heating jackets and an agitator. During mashing, the right amount of agitation is crucial to ensure the homogeneity of the mash in the conversion vessel and to increase the heat transfer. Meura's conventional mash tun, with a maximum amount of heating surface and a specially designed agitator for fine grist mashes, provides a 1°C/min temperature increase for up to 40 brews in any cleaning cycle.



Nigerian Brewery Lagos, Nigeria (Heineken)

But there is more. Conventional mash tuns always have disadvantages which are well known to the brewer: the strong agitation required to ensure a good heat transfer causes particle attrition and mash oxidation, leading to gel formation with mash filtration difficulties as a result. The fouling of the double jackets progressively reduces the heat transfer.

To overcome these problems, Meura has developed and patented a system of mash heating through direct steam diffusion. The system is called "**AFLOSJET**", the Anti-Fouling LOw Shearforces mash heating system.

Mash filtration: Meura 2001 Hybrid

The Meura 2001 technology still remains the star of a Meura brewhouse. The **Meura 2001 Hybrid**, the latest design with several drastic changes after almost five years of intensive research, simultaneously delivers the following unique performances:

>14 brews per day

AND

Extract yield at least equal to laboratory yield

AND

Very bright wort (Imhoff <5ml/l)

AND

**High gravity wort (>17°P cold wort,
without the need for weak wort recovery)**

In addition, less than 2.2 litres of sparging water per kilo of malt is needed, which means short sparging cycles and thus improved wort quality. A single filter can take throws of up to 16 tons, thanks to a more homogeneous filling of the filter chambers.

About a decade ago, with the development of the high performance up-stream process to the Meura 2001 filter

described here, Meura became increasingly involved in major brownfield projects. It then only required a small step to complete the technology towards a full turnkey Meura brewhouse. In the early 2000s Meura focused its research efforts on further developing the process after the Meura 2001 filter.

Wort heat treatment

Meura developed high performance internal and external boiling methods for conventional wort boiling. The forced flow, including in the internal boiler, reduces fouling of the internal bundle, and with a low steam pressure of a maximum of 2.5 bars and an average evaporation rate between 4 and 6% a high quality wort is produced.

However, the conventional boiling systems are outperformed by the development of the **Ecostripper**, an ecological and economical wortstripping technology which generates major energy savings while producing a very high quality wort, and thus improving the final beer quality.

With a very low overall evaporation rate of maximum 1.5% and a very efficient removal of unwanted volatile compounds (up to 96% DMS removal compared to 50-60% with conventional systems), the EcoStripper is extremely economical in terms of its energy consumption level and also improves wort quality.

Trub separation

For brewers who accept some extract losses and do not want to recycle the trub, Meura presents its whirlpools. The trub of a whirlpool is highly oxidised and is not recommended for recycling in the process.

However, with the **Clarisaver**, Meura has developed a technology to recover hot trub during wort cooling and to recycle this non-oxidised trub. The Clarisaver consists of a vertical cylindrical-conical tank. The wort is clarified by natural decantation and is collected via several wort outlets located at various levels on the tank wall.

Conclusions

Meura's brewhouse technologies provide an industrial brewhouse without extract losses. As a result of the development of a new state-of-the-art brewhouse concept, Meura has been providing three to six turnkey greenfield brewhouses per year in the past few years - in addition to 10-15 brewhouse revampings.

And once more, Meura is going a step further! Having a high-performance batch brewhouse still has its limits.

Batch processes have peak consumptions in steam, cooling liquids, compressed air, etc; they need a great deal of space, have more energy losses, produce more product variation, etc.

That's why Meura introduced its first continuous brewhouse (named the **Meurabrew**) in 2007. Today three Meurabrews have been installed or ordered. This goes to show that technological (r)evolution never rests!



Sulimar Brewery



“Na zdrowie”!

That's what Meura will say to the Polish brewery **SULIMAR** when their renovated brewhouse starts production in November 2011!

In a market dominated by four large brewery groups, increasingly more Polish craft brewers are still managing to develop and create their own market.

Amongst them the Sulimar brewery, located in the city of Piotrków Trybunalski – *the second largest industrial, educational and cultural regional centre* – stands out as one of the strongest regional breweries in Poland.

From its creation in 1981 by Henryk Supady and Eugeniusz Lisowski, this family firm has constantly expanded, in particular thanks to numerous investments and its determination to develop new products. Today Sulimar offers a wide variety of beers dedicated to true aficionados of this noble drink.

Due to their success, the new management – *and sons of the founders* – Mariusz Supady and Marcin Lisowski saw the production volume of their brewery increase considerably. They quickly understood

that they would have to adapt and modernise their copper brewhouse, until then equipped with a lauter tun.

The brewery's objectives for this modernisation were :

- **to increase productivity**
- **to improve the yield - and therefore to limit losses**
- **to develop High Gravity Brewing technology**
- **to improve the quality of the wort.**

To cope with these four targets, Meura was then the only company able to provide them with a technological solution by integrating:

- **a Classicmill CLM2 with a capacity of 6.8 tons of malt per hour**
- **a malt grist bin on load cells**
- **a malt cleaning device**
- **a Mechamasher for 25 tons malt grist per hour**
- **a Meura 2001 Hybrid filter with a capacity of 6.5 tons malt equivalent.**

Once more Meura succeeded in convincing an independent and regional brewery of medium size, thus

demonstrating that whatever the requirements, Meura always has the most suitable technological solution!



Current news

VLB Mexico

29 March 01 April 2011 – Mexico



Raul Martinez, Area Sales Manager, attended the VLB convention in Mexico. It was a good opportunity to meet some clients from the Americas and introduce them to Meura's latest developments.



in Glasgow, Scotland last May. During this edition Laurent Marlé presented a poster entitled "Impact of mashing-off temperature on trub quantity and clarification in high gravity worts" that generated strong interest from the visitors.

MBAA Caribbean Section

3-7 May – Jamaica



In early May Raul Martinez, Area Sales Manager, attended the 50th Annual MBAA Caribbean District Convention organized in Jamaica where he created some very productive contacts.

Brasil Brau

5-7 July, Sao Paulo – Brazil



Raul Martinez, Area sales manager, and Enrique Azzali, Meura Sales Representative, exhibited at Brazil Brau last July where Mr. Martinez held a lecture under the title "New boiling concept: the Meura Ecostrripper"

which was a huge success with the audience. They welcomed many professionals from the brewing sector who showed deep interest in our state-of-the-art technologies and our latest developments. This made this edition a real success for Meura!

WDSC (Worldwide Distilled Spirits Conference)

12-15 September 2011, Glasgow – UK

From right to left: Jeroen Vandenbussche (Meura), Dan Donnelly (Diageo), David Quinn (Pernor-Ricard) and David Clifford (Meura)



This September, Jeroen Vandenbussche, Sales and Marketing Manager, and David Clifford, Manager of Meura UK, took part in the Worldwide Distilled Spirits Conference organized in Glasgow.

EBC (European Brewery Convention)

22-26 May, Glasgow – Scotland



Jeroen Vandenbussche, Sales and Marketing Manager, Laurent Marlé, R&D Engineer and Frédérique Harmegnies, R&D Manager exhibited at the EBC 2011 organized

UPCOMING EVENTS:

BRAU BEVIALE 2011 – Hall 7, stand 432-434-531
Come and visit us!



Meura's projects

Meura is on the move all over the world.

Here is a brief overview of Meura's current projects:

The most recent orders:

- Cambrew, Cambodia:** Meura will supply a Classicmill CLM5, a Mechamasher 50 t/h and a Meura 2001 Hybrid equipped with 168 chambers.
- Uganda Brewery, Kampala, Uganda:** ordered a Meura 2001 Hybrid filter equipped with 103 chambers and a Mechamasher 50 tons per hour.
- Brarudi, Burundi:** Meura will be in charge of the brewhouse revamping
- United Breweries Karnataka, India:** A Classicmill CLM2 PCV and a Meura 2001 Hybrid filter have been ordered.
- Brouwerij Boon, Belgium:** A Mechamasher 12 ton/hour will be supplied
- Bintang Brewery, Indonesia:** A new brewhouse will be installed
- Maltexco, Chile:** Meura will supply a Classicmill CLM3 and a mash tun
- Lion Brewery Ceylon, Sri Lanka:** ordered a Mechamasher 25 ton/hour, a Classicmill CLM2 as well as a Meura 2001 Hybrid filter equipped with 76 chambers
- Carlsberg Northampton, U.K.:** a third Meura 2001 Hybrid filter equipped with 168 chambers has been ordered.
- Brasseries du Cameroun, Yaoundé, Cameroon:** A Carbomill 9 ton/hour will be installed

11. Irish Distilleries Ltd, Middleton, Ireland:

Meura will supply a continuous brewhouse for the whisky production.

- Ibadan Brewery, Nigeria:** ordered a Meura 2001 Hybrid filter equipped with 120 chambers and entrusted Meura for the process and security adaptation of the existing equipment.

Major projects being carried out:

- Bralima Brewery, RD Congo:** Meura is installing 2 hammer mills, a Mechamasher, a Meura 2001 Hybrid mash filter, a mash tun and a cereal cooker.
- ATE Lima, Peru:** Meura is working on the brewhouse revamping (Carbomill, Mechamasher, mash tun, cereal cooker, double Meura 2001 Hybrid mash filter, Ecostrripper, ...)
- Al Arham, Egypt:** A Meura 2001 Hybrid mash filter, a Classicmill and an external cooker are being installed.
- Chimay Brewery, Belgium:** Meura is erecting a whirlpool and a wort cooler.
- UBIO Chemicals Limited, India:** a Meura 2001 Hybrid mash filter and a Classicmill are under erection.
- Brasserie du Congo (Pointe Noire), Congo Brazzaville:** Meura is supplying a complete brewhouse and the malt handling plant.

Major projects recently commissioned:

- Sedibeng, South Africa:** a Mechamasher, a Classicmill and a Meura 2001 Hybrid mash filter.
- VBL Danang, Vietnam:** A new brewhouse.
- Huyghe Brouwerij, Belgium:** A Meura 2001 Junior Hybrid mash filter, a Classicmill Junior and a Mechamasher.
- Nocal Brewery, Angola:** A wort preheater and a wort kettle.
- Star Madagascar:** An Ecostrripper and an Aflosjet.
- Moscow Brewing Company, Russia:** 2 Classicmills CLM5 and a Mechamasher (50 t/h).
- Compania Cervecierias Unidas, Chile:** A Classicmill, a Mechamasher and a Meura 2001 Hybrid mash filter.
- Sulimar Brewery, Poland:** Brewhouse modernisation with a Classicmill, a Mechamasher and a Meura 2001 Hybrid mash filter.
- BGI (Hawassa), Ethiopia:** A complete brewhouse as well as a malt handling plant.
- SOLIBRA, Ivory Coast:** In addition to the revamping of the Meura 2001 mash filter Meura has installed a Mechamasher, a wort kettle and a wort preheater.
- Waitemata Brewery, New Zealand:** A Mechamasher, a Classicmill and a Meura 2001 Hybrid mash filter.
- Star Madagascar:** A wort preheater.